the assistant secretary is not expected to make scientific decisions but, ideally, should be able to exercise the traditional skills of the senior foreign service officer, the analytic skills of the scientist or engineer, and the managerial skills of the successful executive. In addition to gaining the cooperation of the scientific community and the confidence of the Secretary of State and his lieutenants, the OES head must "maneuver effectively within the Washington bureaucracy." It is important to note that most domestic federal departments these days have technical programs with international implications and the problem is to create viable relations between domestic and international programs. For this reason, says the Glennan report, the person in the top science post "must be able to assert effectively the role of the Department of State in shaping and guiding the international programs of various technological agencies without arousing antagonism in the process."

Glennan, the first head of the National Aeronautics and Space Administration and a former president of what is now Case Western Reserve University, served as a member of the Atomic Energy Commission and representative to the International Atomic Energy Agency, so he is familiar with scientific diplomacy, both international and interagency. In writing the report, Glennan consulted more than a hundred well-informed people and had the close cooperation of persons with direct experience of the subject, including Herman Pollack, a former head of the office that became OES. The report's recommendations, therefore, represent a kind of consensus for action within the international science policy community.

A main point in Glennan's diagnosis is that OES is overwhelmed with operational responsibilities. The office, for example, handles the details of many bilateral and multilateral science agreements which have been concluded over the years, and is burdened with routine duties which might be handled elsewhere.

OES suffers from the fact that, in career terms, the office is a sidetrack for foreign service officers. It is not simply that there are few career officers with scientific or engineering credentials, but that political and economic expertise is put at a premium in the recognition and reward structure of the career service.

The Glennan report urges a number of changes which would positively affect attitudes toward science and technology at State and make service in OES more attractive. Glennan does not think that sweeping changes can be made overnight, however. He says he hopes for well-conceived long-term efforts designed to make the foreign service officer corps more "technologically literate." This would require changes in selection criteria and alteration in the career ladder, and might take 15 years or more. Glennan thinks such measures can succeed, pointing to the fact that a generation ago economics was regarded with roughly the same hauteur as science and technology are now in the State Department, but emphasizes that what is essential is "a constituency for change" in the upper reaches of the department.

Immediately needed, according to the report, are a bigger budget for OES and an increase in the number of staff. The report also puts stress on the creation of a much improved planning capacity for OES. Glennan recommends both an internal planning group, which would be free of day-to-day operational demands, and the creation of links with outside institutions, perhaps groups in first-line universities, which would perform "think tank" functions for OES.

Some progress in centralizing authority over science and technology affairs in State has been made in the last decade. In 1974, OES was created by combining the former Office of Scientific and Technological Affairs with separate offices dealing with environmental, fisheries, wildlife, and population issues (*Science*, 13 September 1974). OES was elevated to bureau status and the head of the office to assistant secretary rank. A decision to search for a prominent scientist to fill the job caused a delay, and then the post was filled by Dixy Lee Ray, who became available when the Atomic Energy Commission, which she headed, was dissolved in an energy agency reorganization. Ray, a biologist and now governor of Washington State, stayed at OES about 6 months and then resigned with a blast at Secretary of State Henry Kissinger for not employing her or the office productively. Her replacement was Frederick Irving, a career foreign service officer with ambassadorial rank. Observers feel that the Ray episode was a setback for OES, but that one positive result was the commissioning of the Glennan study by then Under Secretary of State for Economic Affairs Charles W. Robinson, who subsequently moved up to the more influential post of Deputy Secretary of State. Some partisans of science and technology think that the Ford Administration went out of office just at the time top officials were preparing to act on the problems of science and technology.

How the Carter Administration will treat science and technology at State is by no means clear. Until the end of March, Mink and Benson were kept in departmental limbo because their appointments, which require Senate confirmation, were caught in the logjam of subcabinet jobs ascribed to the overloading of the FBI security clearance channels.

At her confirmation hearings late in March, Mink made a forthright case for strengthening OES, eliciting what seemed to be a sympathetic senatorial response. But what actually happens to proposals for more budget and staff is what counts. Perhaps even more significant will be the decisions on how OES is to be involved in main-line technical issues such as those which cluster around the problem of nuclear proliferation. But the key question remains that of the attitude of Secretary Cyrus Vance and his top lieutenants. If they take science and technology seriously, the department is conditioned to do the same.

—JOHN WALSH

RECENT DEATHS

Charles A. Ragan, Jr., 65; former chairman, medicine department, College of Physicians and Surgeons, Columbia University; 26 October.

William Nordberg, 46; director of applications, Goddard Space Flight Center, National Aeronautics and Space Administration; 3 October.

Lars Onsager, 72; former professor of chemistry, Center for Theoretical Studies, University of Miami; 4 October.

Leon H. Schneyer, 57; professor of physiology and biophysics, School of Medicine and School of Dentistry, University of Alabama; 23 October.

Albert Soglin, 58; professor of mathematics, Loop College, City Colleges of Chicago; 4 October.

F. Lynwood Wren, 82; professor emeritus of mathematics, California State University, Northridge; 20 October.

Erratum: At one point in the 1 April News and Comment story about the Ford-MITRE study, page 41, a printing error misstated that study's advice for revising the national breeder research program. The word *emphasize*, in line 17 of column 2, was the problem. The story should have read, "The breeder program should be restructured to *deemphasize* early commercialization and to stress a more flexible approach to basic technology."

Erratum: In "Control of influenza and poliomyelitis with killed virus vaccines" by J. Salk and D. Salk (4 March, page 834), the footnote to Table 2 should read "Total number of samples from *4866* different children." In Table 6, under year 3, type J, 99.4 and 96.0 should read *88.4* and *86.0*, respectively.

Erratum: Representative Ray Thornton (D–Ark.) was incorrectly identified as a Texas congressman on page 563 of *Science*, 11 February.